## REMARKS

Telephone Interview:  The undersigned makes of record his telephone call to Examiner Thompson on 2 June 2005 for the purpose of proposing to further amend claims 27 and 29-33 so that a limitation therein would be common to amendment already made in each of claims 1, 12, 23 and 25 but the undersigned and the examiner agreed that such an amendment could be made by preliminary amendment upon filing Request for Continued Examination, rather than as an after-final amendment.

Status of Claims:  With reference to the Office action of April 7, 2005, Applicant submits Request for Continued Examination, and claims 27 and 29-33 are amended accordingly.  In all, claims 1, 12, 23, 25, 27, 29-33 are further amended.  No new matter is added.  All amendments find antecedent support in the patent application, and reference is made there for support of the amendment in claims 1, 12, 23, 25 to page 17, lines 24-26; and to page 4, lines 7-12, for the amendments in claims 27, 29-33. Claims 1-33 are in the application.

I.   Response to Rejection under 35 U.S.C. 103 based on *Ikeda* in view of *Ball*:

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The Examiner rejects claims 27-28, 30 and 32 under 35 U.S.C. 103, as being unpatentable over *Ikeda* in view of *Ball*.  However, claims 27-33 are non-obvious and clearly patentably distinguishable over the combination of *Ikeda* and *Ball*, since they have amended by exactly the same amendments as those made in claims 1, 12, 23, and 25 in response to the Office action of August 11, 2004 by adding the limitation "the calculated data

including level information in the secondary data which was lost in the primary data". Claims 1, 12, 23, and 25 were rejected by *Ikeda* and *Ball* in the Office action of August 11, 2004, but after these amendments, they should now be in the category of claims rejected over *Ikeda, Gann,* and *Ball*. These amendments in claims 27-33, that are the same as made in claims 1, 12, 23, and 25, are made in this preliminary amendment only because they were erroneously overlooked in making the amendment in response to the Office action of August 11, 2004.

Claims 27-28, 30, and 32 have also had made in them the same amendments as claims 1, 12, 23, and 25 had been made in response to the Office action of August 11, 2004. This means that claims 27-28, 30, and 32 should also be subject to the same rejection as claims 1, 12, 23, and 25, under 35 U.S.C. 103 based on *Ikeda* in view of *Gann* and *Ball*.

Accordingly, claims 27-28, 30, and 32 are non-obvious over *Ikeda* in view of *Gann* and *Ball*, for the same reason as set below.

II.  Response to Rejection under 35 U.S.C. 103 based on *Ikeda* in view of *Gann* and *Ball*:

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The Examiner rejects claims 1-5, 11-16, and 22-26 under 35 U.S.C. 103, as being unpatentable over *Ikeda* in view of *Gann* and *Ball*. However, claims 1-5, 11-16, and 22-26 are non-obvious and are patentably distinguishable over the combination of *Ikeda, Ball,* and *Gann*, since those references do not disclose individually or in combination the technique equivalent to the tertiary data of the present invention. Tertiary data in the

present invention, which specifies the correlation information between each of the pixels, include lost level information (tonality level).

The LUT in *Ikeda* only specifies correlations between values between two images, as Examiner can see from the conversion table in Fig. 14. When correlations are done according to *Ikeda*, conversion from a certain value will always result in the same value, even when the positions of pixels are different. The technique of *Ikeda* will not be able to reproduce the 1024 tones that 10-bit images originally have, and can only assign the 256 kinds of values that the 8-bit representation shows to the 256 values in the 10-bit representation. The LUT in *Ikeda* (a table to convert a 8-bit representation to a 10-bit representation), which the Examiner incorrectly refers to as an equivalent of the tertiary data in the present invention, does not have the effect of increasing level information like the tertiary data. The LUT in *Ikeda* is not "data that includes level information" like the tertiary data in the present invention.

On the other hand, in the present invention, the tertiary data specifies correlation between two data according to each of the positions of each of the pixels. This means that even where there are plural pixels of the same values, it is possible for each pixel to be converted into different values, individually, by using tertiary data. Logically, it will be possible to increase the data amount of the reproduced secondary data up to [the number of tones in the primary data] multiplied by [the number specified for each pixel in the tertiary data]. As a result, the reproduced secondary data can reproduce a variety of level information.

By comparison with the cited references, the present invention calculates the tertiary data, which includes level data lost, from the difference between the two images. Therefore, it is important that there are two images (two types of information; the primary data and the secondary data) that have different amounts of level information. For example, a digital camera would have a 12-bit raw data and an 8-bit image data.

Moreover, as a further distinction relative to the cited art, the present invention has the unique advantage in that, by additionally recording the tertiary data to a file after the tertiary data has been calculated, the present invention adds choice to what processes can be done afterwards. The choices are: (1) Choosing only the primary data, and reproducing a standard image data; and (2) Reproducing image data with more level information from the primary and tertiary data.

*Ikeda* and *Gann* do not disclose or suggest these features. Thus, for example, claim 1 recites the features of

> a correlation calculating unit for calculating data that determines correlation between the primary data and the secondary data <u>according to each position of each pixel</u>, the calculated data including level information in the secondary date which was lost in the primary data, and employing the calculated data as tertiary data; and
> a recording unit for recording the primary data and the tertiary data in a file.

Comparable features appear in each of the claims. For example, claim 11 recites the features of

said correlation calculating unit is a unit for expanding the irreversibly compressed primary data, calculating data that determines correlation between the expanded primary data and the secondary data, and employing the calculated data as the tertiary data.

Claim 25 recites a method including the features of

calculating data that determines correlation between the primary data and the secondary data <u>according to each position of each pixel</u>, the calculated data including level information in the secondary date which was lost in the primary data, and employing the calculated data as tertiary data; and

recording the primary data and the tertiary data in a file.

Claim 27 recites apparatus recites the features of

a correlation calculating unit for calculating data that determines correlation between the primary data and the secondary data <u>according to each position of each pixel, the calculated data including level information in the secondary data which was lost in the primary data,</u> and employing the calculated data as tertiary data; and a recording unit for recording the primary data and the tertiary data in the file, comprising:

a reading unit for reading the primary data and the tertiary data from the file; and

a secondary data calculating unit for reproducing the secondary data based on the primary data and the tertiary data.

Thus, all the claims as presently amended emphasize the differences relative to the references by clarifying what is tertiary data in the present invention.

It is clear that *Ikeda* and *Gann* combined do not make the present invention obvious to the skilled artisan. One skilled in the art will not be able to actually combine the LUT in *Ikeda* and the technique in *Gann* to store plurality of images. Each of the parts in the inventions will be mixed up and some will be irrelevant, such that a concrete way of combining them will not even be conceivable. The references are thus not combinable to provide the presently claimed invention; and their attempted combination goes even beyond hindsight in providing an unworkable combination.

III. Response to Rejection under 35 U.S.C. 103 based on *Ikeda* in view of *Ball* and *Hayashi*:

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The Examiner rejects claims 29, 31, and 33 under 35 U.S.C. 103, as being unpatentable over *Ikeda* in view of *Ball* and *Hayashi*. However, claims 29, 31, and 33 are amended in the same way as 27-28, 30 and 32, and should be considered to be non-obvious over the cited references for the same reasons as claims 27-28, 30 and 32.
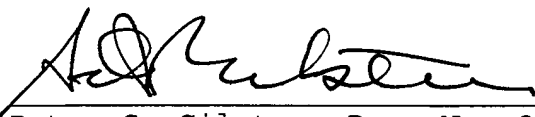
It is believed that the foregoing resolves all remaining issues, and the application is in good order for allowance, and a Notice of Allowance is solicited. If Examiner believes there is any remaining issue, which could be readily resolved or other action could be taken to advance this application, such as Examiner's amendment or interview by telephone or in person, it is

requested that Examiner please telephone the undersigned, who will cooperate to advance prosecution.

If necessary to effect a timely response, this paper should be considered as a petition for extension of time of length sufficient to be considered timely. Any fees required are authorized to be charged to Deposit Account No. 07-1985.

Respectfully submitted,

_7 July 2005_
Date

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Attachments:    Request for Continued Examination
                Revocation of Power of Attorney
                Transmittal with Certificate of Mailing
                Fees ($790.00)
                Postal Acknowledgement Card